

NOTES ON THE FLORA OF KWANGSI PROVINCE, CHINA

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KWANGSI Province, in southern China, bordering on Kwangtung to the east, Yunnan to the west, and Tonkin to the south, received comparatively little attention from botanical collectors in the early years of the botanical exploration of China. In recent years, however, extensive and important collections have been assembled from Kwangsi, particularly through the initiative and interest of Prof. W. Y. Chun, Director of the Botanical Institute, Sun Yatsen University, Canton, Dr. F. P. Metcalf of Lingnan University, Canton, and Dr. A. N. Steward of the University of Nanking, Nanking, China. Various expeditions organized by these men, and supported, in part, by grants made from the Arnold Arboretum of Harvard University, have operated in most parts of Kwangsi. Yet it is clear that the area has not been thoroughly covered from a botanical standpoint, and the desirability of additional future explorations is indicated. The material assembled at the Arnold Arboretum, on which this study is based, represents that institution's share of the collections made under coöperative arrangements with the several Chinese institutions.

This study is based on representatives of a few selected families of plants and clearly indicates what may be expected in the form of additions to our knowledge of the flora of China as the work of identification progresses. Twenty-six new species and two new varieties are described, nine of the species having been so designated by Dr. E. D. Merrill in his preliminary work on the collections. This study was made possible by a grant from the Milton Fund of Harvard University to Dr. Merrill, to assist him in preparing data for publication on the very extensive collections of Chinese botanical material assembled at the Arnold Arboretum in recent years.

PROTEACEAE

Helicia Loureiro

Helicia vestita W. W. Smith var. **mixta** var. nov.

A typo differt foliis brevioribus latioribus integris vel sursum irregulariter pauce dentatis.

HAINAN: Man-ning, S. K. Lau 28252, Nov. 26, 1936, a tree 10 m. high, in forest, fruit green. KWANGTUNG: Shih Wan Tai Shan, H. Y. Liang 69841, July 23, 1937, a tree 12 m. high, in mixed forests. KWANGSI: Shang-sze District, Shih Wan Tai Shan, near Iu Shan Village, W. T. Tsang 22430, June 2-7, 1933, a tree 22 ft. high, fairly common in thickets, flowers yellow; Tseung-yuen, Liow Shiang, C. Wang 39624 (TYPE), June 30, 1936, a tree 20 m. high, in thin woods, flowers white.

These specimens closely resemble each other and represent a form differing from the Yunnan type in that the leaves are shorter and relatively broader (about 10-16 cm. long and 5.5-6 cm. broad), entire or with only a few shallow distant teeth near the apex.

ANNONACEAE

Orophea Blume

Orophea anceps Pierre, Fl. For. Cochinch. 1: t. 46. 1881; Finet & Gagnep. in Lecomte, Fl. Gén. Indo-Chine 1: 117. 1908.

KWANGSI: Pin-lam, S. P. Ko 55657, Aug. 29, 1935, a shrub on forested slopes, fruits yellowish red.

Although three species of *Orophea* are known from Hainan, this is the first record of the genus in continental China. Indo-China.

HAMAMELIDACEAE

Corylopsis Siebold & Zuccarini

Corylopsis cordata Merrill in herb. sp. nov.

Frutex 2–3 m. altus, ramulis glabris rubro-brunneis parce lenticellatis; foliis subchartaceis petiolatis glabris utrinque subconcoloribus oblongo-ovatis vel subelliptico-ovatis, 10–15 cm. longis, 6–9 cm. latis, perspicue acute acuminatis, basi distincte cordatis, margine sinuato-dentatis, dentibus longe mucronulatis, nervis lateralibus utrinsecus 7–9 laxis, inferioribus parce ramosis, cum costa supra leviter impressis, subtus elevatis perspicuis, venulis dense reticulatis tenuibus, supra leviter elevatis, subtus perspicuis; petiolis 2–2.5 cm. longis glabris; floribus ignotis; infructescentiis subspicatis vel racemosis, 3–3.5 cm. longis, pedunculis circa 1 cm. longis, pubescentibus vel glabrescentibus; capsulis 1 cm. longis, 8 mm. crassis, glabris, brunneis subsessilibus vel breviter crasseque pedicellatis; seminibus nigris, 8 mm. longis, laevibus, nitidis.

KWANGSI: Shang-sze District, Shih Wan Tai Shan, near Iu Shan Village, W. T. Tsang 22261 (TYPE), May 11, 1933, a fairly common shrub 2 m. high in thickets; Shih Wan Tai Shan, Tang Lung Village, W. T. Tsang 24256, Sept. 14, 1934, a shrub 10 ft. high, fairly common in thickets; Shih Wan Tai Shan, Nam She Village, W. T. Tsang 24747, Nov. 26, 1934, like the preceding number.

A species close to *Corylopsis Wilsonii* Hemsley, differing in the broader leaves, which are glabrous on both surfaces and more strongly toothed, the shorter infructescences, and the smaller fruits.

Eustigma Gardner & Champion

Eustigma Balansae Oliv. in Hook. Ic. Pl. 20: t. 1954. 1891; Guillaum. in Lecomte, Fl. Gén. Indo-Chine 2: 710. 1920.

KWANGSI: Lin Yui District, Na I, A. N. Steward & H. C. Cheo 696, June 14, 1933, a shrub 6 m. high, in valley, alt. 1000 m., fruits (immature) green.

This species was originally described from Tonkin, in Indo-China. New to China.

SIMARUBACEAE

Brucea J. F. Miller

Brucea acuminata sp. nov.

Frutex, ramis rubro-brunneis subdense albo-lenticellatis; foliis 40–45 cm. longis, rhachibus teretibus puberulis, petiolis 7–8 cm. longis, teretibus puberulis; foliolis circa 15, oppositis, breviter petiolulatis chartaceis, oblongo-lanceolatis, 5–8 cm. longis, 1.5–2.5 cm. latis, longe graciliter acuminatis, basi obtusis vel late acutis, aequalibus vel subobliquis, margine

integris, supra atro-viridibus, subtus viridibus, utrinque minute consperse pubescentibus, nervis lateralibus utrinsecus 8–10, supra subconspicuis, subtus elevatis distinctis, venis tertiariis supra inconspicuis, subtus conspicuis vel obscuris, petiolulis ad 3 mm. longis; floribus ignotis; infructescentiis axillaribus (ut videtur, plerumque in axillis defoliatis) gracilibus elongatis, ad 15 cm. longis, rhachibus parce puberulis vel glabratis, pedicellis 4–5 mm. longis, puberulis, calyce persistente minuto 4-partito, fructibus ovoideis, 8–9 mm. longis, 6–7 mm. crassis, in sicco brunneis (ex collectore rubris), extus glabris in sicco subreticulatis.

KWANGSI: Ching Hsi District, *S. P. Ko 56114* (TYPE), Dec. 10, 1935, a shrub along roads in the margins of thickets or forests.

This species is apparently allied to *Brucea mollis* Wall., originally described from India, its variety *tonkinensis* Lecomte being recorded from Indo-China and from southern China. The new species is distinguished by its much smaller, narrower, longer acuminate, and shorter petiolulate leaflets and its slender infructescences.

STERCULIACEAE

Reevesia Lindley

Reevesia tomentosa sp. nov.

Arbor circa 12 m. alta, ramis teretibus stellato-tomentosis, ramulis dense stellato-tomentosis, indumento ferrugineo; foliis subcoriaceis oblongo-ovatis, 8–14 cm. longis, 3–6 cm. latis, acutis vel obtusis, basi rotundatis vel obscure subcordatis, supra olivaceis, disperse stellato-tomentosis, subtus pallidioribus dense brunneo-tomentosis, nervis lateralibus utrinsecus 6–10, supra impressis, subtus elevatis, venis tertiariis supra leviter impressis, subtus subconspicuis; petiolo dense brunneo-tomentoso, 1–3 cm. longo; floribus ignotis; fructibus longe pedicellatis, lignosis, circa 4 cm. longis, 3 cm. latis, obovoideo-oblongis, apice rotundatis leviter depressis, basi acutis, extus dense stellato-tomentosis, indumento ferrugineo; pedicellis 2.5–3 cm. longis; seminibus circa 2.6 cm. longis, alis brunneis circa 2.2 cm. longis, basim versus 0.8 cm. latis, oblongis, apice oblique rotundatis.

KWANGSI: Yung District, Ta Tseh Tsuen, *A. N. Steward & H. C. Cheo 922* (TYPE), Sept. 3, 1933, a tree 12 m. high, valley roadside, alt. 350 m.

A species allied to *Reevesia pubescens* Mast., but the leaves are more densely tomentose beneath and also scattered stellate-tomentose above, and the mature fruits are densely covered by brownish stellate hairs.

FLACOURTIACEAE

Hydnocarpus Gaertner

Hydnocarpus Merrillianus sp. nov.

Arbor, ramulis teretibus dense fulvo-pubescentibus; foliis chartaceis oblongo-ellipticis, 18–25 cm. longis, 6.5–11.5 cm. latis, abrupte acutis, basi late acutis, margine integris leviter revolutis, supra atro-viridibus glabris, subtus viridibus parce pubescentibus, venis lateralibus utrinsecus 7 vel 8, supra conspicuis, subtus elevatis distinctis, valde arcuatim adscendentibus, venulis reticulatis, utrinque perspicuis; petiolis 1.5–3.5 cm. longis, dense fulvo-pubescentibus; floribus ignotis; fructibus magnis axillaribus solitariis globosis, junioribus dense fulvo-pubescentibus, maturis

castaneo-velutinis, 8 cm. diametro, pericarpio 5 mm. crasso; seminibus numerosis compresso-ovoideis, 2.5 cm. longis, 1.7 cm. latis; pedicellis 1 cm. longis.

KWANGSI: Tai Chin Shan, *S. P. Ko 55311* (TYPE), June 14, 1935, 55421, July 4, 1935, a tree, in woods or borders of woods on slopes.

This is the second species of the genus known from China and the first one from continental China, the other, *Hydnocarpus hainanensis* (Merr.) Sleumer, being known from Hainan. This new species is characterized by the large, entire leaves with densely pubescent petioles, and the large globose fruits.

PASSIFLORACEAE

Passiflora Linnaeus

Passiflora Papilio sp. nov.

Suffruticosa scandens glabra, ramis subligneis gracilibus 2.5 mm. diametro, ramulis ultimis 1 mm. diametro; foliis subchartaceis, petiolatis, supra in sicco olivaceis, subtus pallide glaucescentibus minute consperse puberulis, 3–5 cm. longis, 9.5–12 cm. latis, basi rotundato-truncatis, apice latissime retusis in lobos 2 ovatos magnos divergentes rotundato-acuminatos abeuntibus, quove 5–7 cm. longo, 2.5–4 cm. lato, margine integris, costa media in mucronulum brevissimum abeunte, nervis lateralibus circa 3, jugo maximo subtriplinervio manifesto ramoso, caeteris subobscuris, venulis supra obscuris, subtus subconspicuis; petiolis circa 3 cm. longis, in partibus inferioribus glandulas binas ferentibus; cirrhis gracilibus glabris ad 6 cm. longis; floribus ignotis; fructibus globosis, 1–1.2 cm. diametro, pedicellis gracilibus, 1 cm. longis, medium versus articulatis; seminibus 3.5 mm. longis, cinereo-nigris foveolatis.

KWANGSI: Tai Chin Shan, *S. P. Ko 55426* (TYPE), July 7, 1935, scandent on trees on slopes.

A very distinct species, characterized by the broad, divergently 2-lobed leaves, which suggest a butterfly in shape, and the small fruits. The field label has notes on the flowers, but the specimen studied has only detached fruits, some of them with remnants of the calyx. The available flowering parts are too fragmentary for description, although, judging from the unique shape of the leaves as compared with other Chinese species, the flower is apt to be of interesting structure.

Passiflora kwangsiensis sp. nov.

Passiflora cupiformis sensu Chun, *Sunyatsenia* 4: 184. 1940, pro parte; non Masters.

Suffruticosa scandens glabra, ramis subligneis. 3 mm. diametro; foliis chartaceis glabris late ellipticis vel leviter obovato-ellipticis, 8–11 cm. longis, 7–9.5 cm. latis, latissime rotundatis vel truncato-rotundatis, obscure undulatis, basi rotundatis ad modum angustissime peltatis, 3–5-nerviis, integris, supra in sicco olivaceis, subtus pallidis, costa nervisque utrinque elevatis distinctis, nervis inferioribus ramosis, venulis dense reticulatis, utrinque elevatis conspicuis; petiolis 4–5 cm. longis, in partibus inferioribus glandulas binas ferentibus; cirrhis gracilibus glabris usque ad 7 cm. longis; floribus ignotis; fructibus axillaribus, 2- vel 3-fasciculatis, globosis, circa 2 cm. diametro, glabris; pedicellis 1.5 cm. longis, medium versus articulatis; seminibus 3.5 mm. longis, pallidis, foveolatis.

KWANGSI: Ling Yuin District, *S. K. Lau* 28577 (TYPE), July 10, 1937, scandent in light woods, fruits green.

A species apparently close to *Passiflora cupiformis* Mast., but differing in the vegetative details, the leaves being broadly elliptic to obovate-elliptic, broadly rounded or truncate-rounded at their apices and sometimes even undulate, their bases being broadly rounded and sometimes very narrowly peltate.

THYMELAEACEAE

Wikstroemia Endlicher

Wikstroemia paniculata sp. nov.

Frutex, ramis ramulisque teretibus glabris gracilibus, ramulis ultimis vix 1 mm. diametro; foliis oppositis chartaceis breviter petiolatis oblongo-ellipticis vel lanceolatis, ad 5.5 cm. longis et 1.6 cm. latis, plerumque acutis, basi acutis vel rotundatis, margine leviter revolutis, utrinque glabris, supra viridibus, subtus paullo pallidioribus, nervis lateralibus circa 20 utrinque subconspicuis in venam a margine ipso circa 1 mm. remotam cum margine parallelam anastomosantibus, venulis obscuris; petiolis ad 3 mm. longis; inflorescentiis terminalibus vel lateralibus paniculatis valde ramosis, ad 5 cm. longis, breviter adpresse pubescentibus, ramis racemiformibus, ad 2.5 cm. longis, pedicellis 0.5–1 mm. longis, sub perianthio articulatis, basi persistentibus; floribus luteis parvis, ad 4 mm. longis, 4-meris, perianthii tubo circa 4 mm. longo et 1.5 mm. crasso, parce pubescente, lobis 4 minutis 0.5 mm. longis; antheris 8, 2-seriatis, linearibus, 0.5 mm. longis; ovario glabro; fructu immaturo ovoideo, 6 mm. longo.

KWANGSI: Ching Sai Village, *S. P. Ko* 55710 (TYPE), Sept. 7, 1935, a shrub in open places near slopes, flowers yellow.

A distinct species, strongly characterized by its leaves with lateral veins united into a single vein parallel with and close to the leaf-margins, and by the much-branched panicles bearing rather small flowers.

ALANGIACEAE

Alangium Lamarck

Alangium Chungii sp. nov.

Frutex vel arbor parva, ramulis ultimis atro-brunneis gracilibus teretibus leviter adpresse tomentosus vel glabrescentibus; foliis chartaceis longe petiolatis late ovatis, 11–22 cm. longis, 9–16 cm. latis, acutis, basi cordatis valde inaequilateralibus, 3–6-nerviis, margine integris, supra glabris costa nervisque interdum parce tomentosus exceptis, nervis lateralibus utrinque 4–6 prope marginem anastomosantibus, utrinsecus conspicuis, venulis dense reticulatis, utrinsecus perspicuis; petiolis 5–10 cm. longis, teretibus minute adpresse tomentosus; inflorescentiis axillaribus adpresse tomentosus vel subtomentosus, ad 8 cm. longis, 1- vel 2-ramosis, 4–7-floris, pedunculis 2–3.5 cm. longis, pedicellis 1–2 cm. longis; floribus 2–2.5 cm. longis; calycis tubo infundibuliformi, 2 mm. longo, leviter tomentoso, margine minute 5–7-lobato; petalis 6 vel 7 basi leviter cohaerentibus, lanceolatis, 2–2.5 cm. longis, 1.5 mm. latis, extus tomentosus, intus glabris; staminibus 6 vel 7, circa 1.8 cm. longis, filamentis 6 mm. longis, dilatatis dense villosis, antheris linearibus, 1.2 cm. longis, connectivo villosus; disco subgloboso; ovario 1-loculari, stigmate capitato 4-partito; fructu ignoto.

KWANGSI: no data, *Z. S. Chung* 82038 (TYPE).